

**REMARKS**

The Office Action mailed April 20, 2004 has been carefully reviewed and the foregoing amendments are made in response thereto. In view of the amendments and the following remarks, Applicants respectfully request entry of the amendments and the timely allowance of the pending claims.

Claims 25 and 45 have been amended above to clarify that the at least one probe employed in step c of claim 25 has a single nucleotide variation as compared to the at least one known core sequence probe. Applicants respectfully submit that no prohibited new matter has been introduced by these amendments. Support for the amendments to the claims can be found throughout the specification as originally filed. For example, support for the amendment to claim 25 and new claim 45 may be found on page 23, line 30 to page 25, line 30; Figures 15a and 15b. Support for new claim 46 can be found in column 7, lines 55-57 of U.S. Patent 5,143,854, which is incorporated by reference on page 7, line 4 of the instant specification for all purposes.

***Status of the Claims***

Upon entry of the foregoing amendment, claims 25-45 will be pending.

***The Rejection of Claims 25-45 under 35 U.S.C. § 112, Second Paragraph for Alleged Indefiniteness***

Claims 25-45 have been rejected under 35 U.S.C. § 112, second paragraph, because the term “comprising” allegedly makes it unclear as to whether the probe contains multiple mutations or a single nucleotide variation. Applicants respectfully submit that it was clear from the claim language that what is intended is a probe having a sequence containing a single nucleotide variation as compared to the known core sequence. In any case, in an effort to further clarify this intention, claim 25 has been amended above to indicate that the at least one probe in step (c) has a single nucleotide variation as compared to the at least one known core sequence probe. Applicants believe that, in view of this amendment, the rejection under 35 U.S.C. § 112, second paragraph may be withdrawn.

***The Rejection of Claims 25-27, 30-37, 39, 42 & 45 under 35 U.S.C. § 102(e) as being Allegedly Anticipated by U.S. Patent 6,054,270 to Southern et al.***

Claims 25-27, 30-37, 39, 42 and 45 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent 6,054,270 to Southern *et al.*

Applicants respectfully traverse the rejection because the '270 patent does not teach or suggest the limitations present in the examined claims or in the claims as amended above. It appears that this rejection was maintained in view of the clarity rejection set forth under 35 U.S.C. § 112, second paragraph (see Office Action, page 3, last line). Accordingly, Applicants believe that clarification of the claim language with respect to the single nucleotide variation should also resolve the rejection under 35 U.S.C. § 102(e) based on U.S. Patent 6,054,270 of Southern.

The Office Action further indicates that Southern's measure of the complementariness of two strands in the process of hybridization during the melting is a measure of binding affinity (Office Action, page 4). However, Southern does not teach comparing the binding affinity of a target sequence to a known core sequence probe and a single nucleotide variation of the known core sequence probe as recited in the amended claims.

For these reasons, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(e) based on U.S. Patent 6,054,270 are respectfully requested.

***The Rejection of Claim 38 under 35 U.S.C. § 103(a) as being Unpatentable over U.S. Patent 6,054,270 to Southern et al. in view of U.S. Patent 5,633,137 to Shuber***

The Office Action alleges that claim 38 is obvious over the combination of the '270 patent and the '137 patent for the reasons *supra* and because the '137 patent discloses ASO probes for detection of mutations in P-53.

Applicants incorporate by reference the comments made above with respect to the '270 patent. Respectfully, the '137 patent does not cure these deficiencies.

***The Rejection of Claims 40 and 41 under 35 U.S.C. § 103(a) as being Unpatentable over U.S. Patent 6,054,270 to Southern et al. in view of U.S. Patent 4,965,189 to Owerbach***

The Office Action alleges that the claims 40 and 41 are obvious over the combination of the '270 patent and the '189 patent for the reasons *supra* and because the '189 patent discloses probes for detection of mutations in DQ beta gene.

Applicants incorporate by reference the comments made above with respect to the '270 patent. Respectfully, the '189 patent does not cure these deficiencies.

***The Rejection of Claim 43 under 35 U.S.C. § 103(a) as being Unpatentable over U.S. Patent 6,054,270 to Southern et al. in view of U.S. Patent 5,468,613 to Erlich et al.***

The Office Action alleges that the claim 43 is obvious over the combination of the '270 patent and the '613 patent for the reasons *supra* and because the '613 patent discloses probe hybridization in forensic analysis.

Applicants incorporate by reference the comments made above with respect to the '270 patent. Respectfully, the '613 patent does not cure these deficiencies.

***The Rejection of Claims 28 and 29 under 35 U.S.C. § 103(a) as being Unpatentable over U.S. Patent 6,054,270 to Southern et al. in view of U.S. Patent 5,324,633 to Fodor et al.***

The Office Action alleges that claims 28 and 29 are obvious over the combination of the '270 patent and the '633 patent for the reasons *supra* and because the '633 patent discloses plotting the binding affinity results of fluorescence assays on graph and normalized [sic].

Applicants incorporate by reference the comments made above with respect to the '270 patent. Respectfully, the '633 patent does not cure these deficiencies.

Furthermore, Applicants note that the '633 patent and the present application were commonly assigned or under an obligation to assign at the time of the present invention and therefore, under 35 U.S.C. § 103(c) the '633 patent is not available as a reference. As stated in the MPEP, section 706.02(I)(1):

Effective November 29, 1999, subject matter which was prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention "were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." This change to 35 U.S.C. 103(c) applies to all utility, design and plant patent applications filed on or after

November 29, 1999, including continuing applications filed under 37 CFR 1.53(b), continued prosecution application filed under 37 CFR 1.53(d), and reissues.

In view of the amendments and remarks entered above, Applicants respectfully request reconsideration and withdrawal of all rejections under § 103(a).

***Conclusion***

In view of the foregoing amendments and response, the Applicants respectfully request withdrawal of the outstanding rejections and early notice of allowance to that effect.

If the Examiner finds that a telephone conference would further prosecution of this application, he is invited to call the undersigned at his convenience.

**EXCEPT** for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

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